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| Mr. Michael T. Davis  Calculus | | Section 3.1 & 3.2 QUIZ  December 12, 2016 | |
| Name: | |

1. Sketch the graph of a continuous function that has the following properties:



i. ,

ii. .

1. Sketch the graph of a continuous function that has the following properties:



i.,

ii.

1. Write an equation for a linear function that has the following properties:

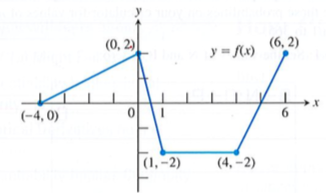


i. ,

ii. .

1. The function  has left-hand and right-hand derivatives at . Does  have a derivative at ? Explain why or why not. You may use the derivative rules here.
2. Use either definition  or  to find the derivative of the function  at . You may NOT use the derivative rules here, and you MUST carefully show all the steps in the process.

1. If  and , write an equation of the tangent line to the graph of  at the point where .
2. If  and , write an equation of the normal line to the graph of  at the point where .
3. The graph of the function  shown here is made of the line segments joined end to end. Graph the function’s derivative function.



1. Determine the value(s) of x for which the function  is not differentiable. Explain why.
2. Given the function , use your calculator to determine the numerical derivative of the given function at the point  using . Write clearly on this paper the expression you enter on your calculator.
3. The graph of a function  is shown below. State the values of x for which the function is not differentiable. Explain why.

